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PATENT ABSTRACTS OF JAPAN

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(54) OIL AND FAT COMPOSITION FOR SPRAY

(57)Abstract:

PROBLEM TO BE SOLVED: To obtain the subject composition capable of providing a food reduced in hardening smell, free from whitening and excellent in palatable property and flavor by including an transesterified oil and fat obtained by subjecting a prescribed amount of palm-based oil and fat to transesterification reaction with a prescribed amount of rapeseed extremely hardened oil having high erucic acid content.

SOLUTION: This oil and fat composition for spray comprises (A) preferably ≥ 10 wt.% transesterified oil and fat obtained by subjecting 99-85 wt.% palm- based oil and fat to transesterification reaction with 1-15 wt.% rapeseed extremely hardened oil having high erucic acid content and further preferably (B) preferably ≤ 90 wt.% oil and fat having $\geq 25^{\circ}\text{C}$ melting point, e.g. oil and fat containing palm middle melting point fraction.

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CLAIMS

[Claim(s)]

[Claim 1] The fats-and-oils constituent for sprays characterized by containing the ester-interchange fats and oils which come to carry out the ester exchange reaction of 99 - 85 % of the weight of palm system fats and oils, and the 1 - 15 % of the weight of the high ERUSHIN rapeseed extreme hardened oil.

[Claim 2] The fats-and-oils constituent for sprays according to claim 1 which contains further fats and oils of 25 degrees C or more of melting points.

[Claim 3] The fats-and-oils constituent for sprays according to claim 2 whose content of fats and oils of 10 % of the weight or more and the 25 degrees C or more of the above-mentioned melting points the content of the above-mentioned ester-interchange fats and oils is 90 or less % of the weight.

[Claim 4] The fats-and-oils constituent for sprays according to claim 2 or 3 which is fats and oils with which fats and oils of the 25 degrees C or more of the above-mentioned melting points contain the melting point fraction in a palm.

[Claim 5] Food using the fats-and-oils constituent for sprays according to claim 1 to 4.

DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[The technical field to which invention belongs] It is related with the fats-and-oils constituent for sprays which flavor can be good, can prevent stickiness of a front face, and can prevent whitening of a still more nearly dailyc front face by carrying out the spray of this invention to food, such as confectionery, in detail about the fats-and-oils constituent for sprays.

[0002]

[Description of the Prior Art] In confectionery and the bread-making industry, improvement and the flavor of the appearance depended for carrying out the spray of the fats and oils to the front face of baking goods, and carrying out glazing, and in order to acquire effects, such as carrying out, improving, or carrying out the spray of the **** to a fired mold or a top-plate side at the time of baking at the time of ground fabrication for grant of fats-and-oils flavor, and improving

mold peeling, a spray oil is often used.

[0003] Although what added the emulsifier to the liquefied oil or liquefied oil had mainly been conventionally used for the spray oil, depending on the product, the feeling of a meal made into PARITSU was lost with the liquefied oil permeated from the front face, or confectionery, such as snack confectionery and PURETTSUERU, had a fault with a sticky front face. Moreover, in case the spray of the spray oil is carried out to food, there is much what is made for fine particles to adhere to a food front face as a taste component (seasoning), and a problem and a bird clapper have much hardness of a spray oil from an adhesive field. Generally, with the low fats and oils of the melting point, the preservation stability of fats and oils was bad, it was hard to use upwards for food for which a mothball is needed, and the front face of the food behind a spray could not get dry easily, the front face was sticky, and there was a fault in which goods value is reduced remarkably. on the contrary -- the high fats and oils of the melting point -- the time of a spray -- fats and oils -- warming -- it needed to dissolve and there was a fault that a **** injury was bad, compared with a liquefied oil

[0004] For this reason, although the good fats and oils of ******, for example, palm oil, palm kernel oil, etc. had been used as a spray oil even if the melting point was high, since hydrolysis was caused and the so-called soap smell occurred when a spray is carried out to food with moisture, these had the fault that it could be used only for food which does not take a mothball into consideration.

[0005] On the other hand, although the spray oil which made the subject the fats and oils which carried out the ester interchange of the medium-chain-fatty-acid triglyceride to the edible oil and fat was proposed by the Japanese Patent Publication No. No. 87207 [five to] official report, and the Provisional-Publication-No. No. 72651 [56 to] official report, these fats and oils had the low melting point, when the spray of these spray oils was carried out to food, the front face of food could not get dry in them easily, and they had the fault that a front face was sticky.

[0006] Although hydrogenating fats and oils and adjusting the melting point was performed in order to solve these problems, since a characteristic smell was emanated in this case, there was a fault that the flavor of the food which used the spray oil became bad.

[0007] In order to solve the problem of this flavor, the spray oil which used the fats and oils of the low melting point section which classified palm oil or palm oil, or the inside melting point section was developed. For example, the spray oil which used the melting point section in palm oil for the Japanese Patent Publication No. No. 44120 [61 to] official report is indicated.

However, there was a problem of the front face of food, such as confectionery which used this spray oil, having whitened, or producing a white spot.

[0008] Although the spray oil which reduced the melting point of fats and oils in the publication-number No. 262753 [one to] official report or the publication-number No. 262754 [one to] official report by blending a liquefied oil with the melting point fraction in a palm was indicated in order to prevent this whitening or white spot generation, a front face could not get dry easily and the food which used this spray oil had the fault that a front face was sticky.

[0009]

[Problem(s) to be Solved by the Invention] Therefore, ******, oxidation stability, and a feeling of a meal are good, and there is no whitening, and a hardening smell is reduced, and the purpose of this invention makes flavor good, and offers the fats-and-oils constituent for sprays which can obtain the food which moreover prevented stickiness.

[0010]

[Means for Solving the Problem] The above-mentioned purpose is attained by offering the fats-

and-oils constituent for sprays characterized by this invention containing the ester-interchange fats and oils which come to carry out the ester exchange reaction of 99 - 85 % of the weight (for it to consider as % hereafter) of palm system fats and oils, and the 1 - 15% of the high ERUSHIN rapeseed extreme hardened oil.

[0011]

[Embodiments of the Invention] Hereafter, the fats-and-oils constituent for sprays of this invention is explained in full detail. You may use the compounded oil which could mention palm judgment oils, such as palm oil, a palm olein, and a super olein, palm hardened oil, and palm judgment hardened oil, and could carry out independent use of these, and mixed two or more sorts with the palm system fats and oils which are the ester-interchange raw material used by this invention. As for the iodine value of these palm system fats and oils, it is desirable that it is 48-67.

[0012] moreover, the rapeseed oil which contains erucic acid 20 to 60% as high ERUSHIN rapeseed extreme hardened oil which is another ester-interchange raw material -- up to five or less iodine value and 50 degrees C or more of melting points -- hydrogenation -- the bottom -- although -- it is used

[0013] The ester-interchange fats and oils which constitute the fats-and-oils constituent for sprays of this invention come [99 - 85% of the above-mentioned palm system fats and oils] to carry out the ester exchange reaction of the 3 - 10% to 97 - 90% preferably the 1 - 15% of the above-mentioned high ERUSHIN rapeseed extreme hardened oil. Since the food after carrying out the spray of the spray fats and oils to food will become hard and ***** will also become bad if stickiness of the front face of the food at the time of using that the amount of the above-mentioned high ERUSHIN rapeseed extreme hardened oil used is less than 1% for food as fats and oils for sprays cannot be prevented but it exceeds 15%, it is not desirable.

[0014] Moreover, as for the ester-interchange fats and oils which carried out the ester interchange of the above-mentioned palm system fats and oils and the above-mentioned high ERUSHIN rapeseed extreme hardened oil, it is good that the fatty acid composition considers [35 - 60% of unsaturated fatty acid contents] as 1 - 5% of range preferably 0.5 - 8% of 40 - 50% and 20 or more carbon numbers saturated fatty acid contents. If there are few unsaturated fatty acid contents of the above-mentioned ester-interchange fats and oils than 35%, since the food after carrying out the spray of the spray fats and oils to food will become hard and **** being injured of food will become bad, it is not desirable, and since stickiness of the front face of the food at the time of using for food as fats and oils for sprays cannot be prevented if [than 60%] more, it is not desirable. Moreover, since stickiness of the front face of the food at the time of using for food as fats and oils for sprays cannot be prevented if there are few 20 or more-carbon number saturated fatty acid contents than 0.5%, when [than 8%] more [it is not desirable and], it is in the inclination for the melting point of fats and oils to become high, and for **** being injured of the melting point to become bad.

[0015] Although which method of the method using metal catalysts, such as a method or a sodium methylate which uses lipase as a catalyst, may be used as the method of the ester interchange in this invention, the way of the method using lipase serves as a savory spray fats-and-oils constituent.

[0016] As long as the lipase used by the above-mentioned ester interchange has ester-interchange activity to fats and oils, what has position singularity may not have position singularity. For example, the lipase obtained from Alcaligenes, Rhizopus, an Aspergillus, a Mucor, a Penicillium, a can reader group, etc. is mentioned. Although these lipase can also be used alone,

it is good to make support, such as the diatom earth, an alumina, activated carbon, and a ceramic, usually fixed, and to use. The ester exchange reaction using lipase is performed with the reaction temperature of 65-85 degrees C under a non-solvent. Either the successive reaction of a column formula or a batch-type reaction may be used for a reaction.

[0017] What is necessary is just to perform the ester exchange reaction using metal catalysts, such as a sodium methylate, by the usual method.

[0018] Thus, although the obtained ester-interchange fats and oils may be used as a fats-and-oils constituent for sprays of this invention as it is, in order to adjust the hardness of fats and oils to these ester-interchange fats and oils, the melting point may mix fats and oils 25 degrees C or more. When this melting point mixes fats and oils 25 degrees C or more, the content of the above-mentioned ester-interchange fats and oils is 30 - 50% still more preferably 20 to 70% preferably 10% or more, and the content of fats and oils of 25 degrees C or more of melting points is preferably mixed 80 to 30% 90% or less so that it may become 70 - 50% still more preferably. At this time, the prevention effect of stickiness of the front face of the food at the time of using that the above-mentioned ester-interchange fats and oils are less than 10% for food as fats and oils for sprays is fully difficult to get.

[0019] The ester-interchange fats and oils which carried out the ester interchange of the ester-interchange fats and oils which carried out the ester interchange of the hardened oil of palm judgment hardened oil, such as cone hardened oil, rice bran hardened oil, cottonseed hardened oil, rapeseed hardened oil, soybean hardened oil, palm hardened oil, and palm olein hardened oil, palm oil and palm judgment oils and these one sort, or the two sorts or more, these one sort or two sorts or more, and the liquefied oil as fats and oils of the 25 degrees C or more of the above-mentioned melting points are mentioned. Furthermore, these fats and oils can be used as independent or a compounded oil which mixed two or more sorts. When considering as a compounded oil, the melting points, such as a liquefied oil and a super olein, can use it by mixing even fats and oils 25 degrees C or less so that the melting point of a compounded oil may become 25 degrees C or more.

[0020] When the above-mentioned melting point uses hardened oil as fats and oils 25 degrees C or more, it is good that the content of the above-mentioned hardened oil considers as 40% or less preferably 60% or less from a viewpoint which offers the fats and oils for sprays which prevent stickiness of the front face of the food at the time of using for food as fats and oils for sprays, and can also employ the flavor of a material efficiently. This is because the flavor of the food which carried out the spray of the spray fats and oils by a hardening smell becoming strong is spoiled, when hardened oil exceeds 60%. Although palm judgment hardened oil, such as above-mentioned cone hardened oil, rice bran hardened oil, cottonseed hardened oil, rapeseed hardened oil, soybean hardened oil, palm hardened oil, and palm olein hardened oil, can be used as this hardened oil, cone hardened oil, rice bran hardened oil, cottonseed hardened oil, and rapeseed hardened oil are more desirable on flavor.

[0021] Moreover, when palm oil and a palm judgment oil are used as fats and oils of the 25 degrees C or more of the above-mentioned melting points, what employed efficiently the flavor of the material of the food which carried out the spray of the spray fats and oils with the flavor carried out frankly is obtained. If the melting point fraction in a palm is used especially, the food with which the flavor of a material was employed efficiently more notably can be obtained. Although obtaining the melting point fraction in a palm from palm oil has solvent separation and dry judgment, it is more desirable than ** so that it may be what carried out solvent separation. An acetone and n-hexane are mentioned as a solvent used here.

[0022] Moreover, if the ester-interchange fats and oils which carried out the ester interchange of one sort or two sorts or more of fats and oils of palm oil, a palm judgment oil, palm judgment hardened oil, and palm hardened oil are used when using an ester-interchange oil as fats and oils of the 25 degrees C or more of the above-mentioned melting points, especially flavor is good and stickiness of the front face of the food at the time of using for food as fats and oils for sprays can be prevented. The way is good although there are a method of making lipase a catalyst as the method of this ester interchange and a method using a metal catalyst, and lipase was used.

[0023] The fats-and-oils constituent for sprays of this invention is suitably used as a spray oil at the time of manufacturing food, such as confectionary, such as snack confectionary which used a potato, a cone, rice, wheat flour, etc. as the raw material, PURETTSUERU, a hard biscuit, and a cracker, a pan class, and cakes.

[0024]

[Example] Next, this invention is not limited by these examples although an example explains this invention in detail.

[0025] The ester exchange reaction was performed for 10kg of 95% of palm oil of the [example 1] iodine value 52.1, and hardened oil [an iodine value 1.5 and 5% of high ERUSHIN rapeseed extreme hardened oil of 60.5 degrees C of melting points] compounded oils by the 15l. reaction vessel, using lipase QLC(Meito Sangyo Co., Ltd. make)50g as the reaction temperature of 70 degrees C, and a catalyst. Bleaching (for the bottom of reduced pressure of 3% of clay, 85 degrees C, and 10mmHg and 30 minutes) and deodorization (for the bottom of 250 degrees C, 3% of steam entrainment *****, and 1mmHg reduced pressure and 60 minutes) were performed after the reaction end (reaction-time 48hr), and the fats-and-oils constituent for sprays (ester-interchange fats and oils) was obtained. The fatty acid composition of the obtained fats-and-oils constituent for sprays was shown in following [table 1].

[0026] An ester exchange reaction, bleaching, and deodorization were performed by the same method as an example 1 using the fats and oils shown in [examples 2-5] following [table 1], and the fats-and-oils constituent for sprays (ester-interchange fats and oils) was manufactured. At this time, the palm olein used the thing of an iodine value 56.8, and the super olein used the thing of an iodine value 65.2, respectively. Moreover, the fatty acid composition of the obtained spray fats-and-oils constituent was shown in [Table 1].

[0027] High ERUSHIN rapeseed extreme hardened-oil 5% ** of an iodine value 1.5 and 60.5 degrees C of melting points was blended with 95% of palm oil of the [example 6] iodine value 52.1, and the ester exchange reaction was performed for 30 minutes (under reduced pressure of 10mmHg) at 80 degrees C by making 0.1% of sodium methylate into a catalyst to fats and oils. After the reaction end, it rinsed, and the catalyst was removed and it dehydrated. Bleaching (for the bottom of reduced pressure of 3% (opposite oil) of clay, 85 degrees C, and 10mmHg and 30 minutes) and deodorization (for the bottom of 250 degrees C, 3% of steam entrainment *****, and 1mmHg reduced pressure and 60 minutes) were performed for this, and the fats-and-oils constituent for sprays was obtained. The fatty acid composition of the obtained fats-and-oils constituent for sprays was shown in [Table 1].

[0028] The fats-and-oils constituent for sprays was obtained using the palm oil and high ERUSHIN rapeseed extreme hardened oil which were used in the [examples 1-5 of comparison] examples 1-6, or cone hardened oil (35 degrees C of melting points) by the combination shown in following [table 1] as a mixed oil as an independent oil. The fatty acid composition of this fats-and-oils constituent for sprays was shown in [Table 1].

[0029] the ester-interchange fats and oils obtained in the [examples 7-13] example 1, and the

following -- fats and oils as shown in [Table 2] were mixed, and the fats-and-oils constituent for sprays was obtained. The fats and oils currently used by following [table 2] are the ester-interchange oil (44 degrees C of melting points) which carried out the ester interchange of the melting point fraction in a palm (36 degrees C of melting points) which classified palm oil (34 degrees C of melting points), cone hardened oil (35 degrees C of melting points), and palm oil with the acetone, and the palm oil by Lipase QLC. it obtains -- having -- the fatty acid composition of the fats-and-oils constituent for sprays was shown in [Table 2]

[0030] The manufacture test was performed in the following combination and the process using the fats-and-oils constituent for sprays of the [cracker manufacture test] examples 1-13 and the examples 1-5 of comparison.

[0031]

During the <process> (1) above, seed combination is mixed for low-speed 2 minutes, and is kneaded by the vertical-mold mixer, and raising temperature is made into 23 degrees C.

(2) While being obtained above (1), ferment the seed ground at 27 degrees C for 18 hours.

(3) the kind ground while fermenting -- ***** combination -- adding -- a vertical-mold mixer -- a low speed -- mix for medium-speed 2 minutes for 2 minutes

(4) Ferment the ground obtained above (3) at 27 degrees C for 4 hours.

(5) Perform the ground obtained above (4) two 3 chip boxes, and roll out ***** to 2mm.

(6) Carry out mold omission and calcinate at 260 degrees C for 4 minutes.

(7) Carry out the spray of the spray oil immediately after baking.

[0033] Ten panelists estimated the flavor and ***** of a cracker which were <appraisal method of a cracker> Obtained. About stickiness of the front face of a cracker, after sprinkling salt and grated cheese over the calcinated cracker, the spray of the spray oil was carried out, and it was kept at 30 degrees C, and the stickiness of after (24 hours and 48 hours) was observed.

[0034] These evaluation results were shown in [Table 1] and [Table 2] with the following signs.

[0037] As shown in Tables 1-2, examples 1-13 are excellent also in any of the flavor in evaluation of a cracker, ***** and stickiness as compared with the examples 1-5 of comparison.

[0038]

[Effect of the Invention] According to the fats-and-oils constituent for sprays of this invention, ***** and oxidation stability are good, and whitening does not have them, either, and a hardening smell is reduced, and food with good flavor can be manufactured. Moreover, the food using the fats-and-oils constituent for sprays of this invention can prevent the stickiness.

PRIOR ART

[Description of the Prior Art] In confectionery and the bread-making industry, improvement and the flavor of the appearance depended for carrying out the spray of the fats and oils to the front face of baking goods, and carrying out glazing, and in order to acquire effects, such as carrying out, improving, or carrying out the spray of the **** to a fired mold or a top-plate side at the time of baking at the time of ground fabrication for grant of fats-and-oils flavor, and improving mold peeling, a spray oil is often used.

[0003] Although what added the emulsifier to the liquefied oil or liquefied oil had mainly been conventionally used for the spray oil, depending on the product, the feeling of a meal made into PARITSU was lost with the liquefied oil permeated from the front face, or confectionery, such as snack confectionery and PURETTSUERU, had a fault with a sticky front face. Moreover, in case the spray of the spray oil is carried out to food, there is much what is made for fine particles to adhere to a food front face as a taste component (seasoning), and a problem and a bird clapper have much hardness of a spray oil from an adhesive field. Generally, with the low fats and oils of the melting point, the preservation stability of fats and oils was bad, it was hard to use upwards for food for which a mothball is needed, and the front face of the food behind a spray could not get dry easily, the front face was sticky, and there was a fault in which goods value is reduced remarkably. on the contrary -- the high fats and oils of the melting point -- the time of a spray -- fats and oils -- warming -- it needed to dissolve and there was a fault that a **** injury was bad, compared with a liquefied oil

[0004] For this reason, although the good fats and oils of ***** , for example, palm oil, palm kernel oil, etc. had been used as a spray oil even if the melting point was high, since hydrolysis was caused and the so-called soap smell occurred when a spray is carried out to food with moisture, these had the fault that it could be used only for food which does not take a mothball into consideration.

[0005] On the other hand, although the spray oil which made the subject the fats and oils which carried out the ester interchange of the medium-chain-fatty-acid triglyceride to the edible oil and fat was proposed by the Japanese Patent Publication No. No. 87207 [five to] official report, and the Provisional-Publication-No. No. 72651 [56 to] official report, these fats and oils had the low melting point, when the spray of these spray oils was carried out to food, the front face of food could not get dry in them easily, and they had the fault that a front face was sticky.

[0006] Although hydrogenating fats and oils and adjusting the melting point was performed in order to solve these problems, since a characteristic smell was emanated in this case, there was a fault that the flavor of the food which used the spray oil became bad.

[0007] In order to solve the problem of this flavor, the spray oil which used the fats and oils of the low melting point section which classified palm oil or palm oil, or the inside melting point

section was developed. For example, the spray oil which used the melting point section in palm oil for the Japanese Patent Publication No. No. 44120 [61 to] official report is indicated.

However, there was a problem of the front face of food, such as confectionery which used this spray oil, having whitened, or producing a white spot.

[0008] Although the spray oil which reduced the melting point of fats and oils in the publication-number No. 262753 [one to] official report or the publication-number No. 262754 [one to] official report by blending a liquefied oil with the melting point fraction in a palm was indicated in order to prevent this whitening or white spot generation, a front face could not get dry easily and the food which used this spray oil had the fault that a front face was sticky.

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EFFECT OF THE INVENTION

[Effect of the Invention] According to the fats-and-oils constituent for sprays of this invention, ***** and oxidation stability are good, and whitening does not have them, either, and a hardening smell is reduced, and food with good flavor can be manufactured. Moreover, the food using the fats-and-oils constituent for sprays of this invention can prevent the stickiness.

TECHNICAL PROBLEM

[Problem(s) to be Solved by the Invention] Therefore, ***** , oxidation stability, and mouthfeel are good, and there is no whitening, and a hardening smell is reduced, and the purpose of this invention makes flavor good, and offers the fats-and-oils constituent for sprays which can obtain the food which moreover prevented stickiness.

MEANS

[Means for Solving the Problem] The above-mentioned purpose is attained by offering the fats-and-oils constituent for sprays characterized by this invention containing the ester-interchange fats and oils which come to carry out the ester exchange reaction of 99 - 85 % of the weight (for it to consider as % hereafter) of palm system fats and oils, and the 1 - 15% of the high ERUSHIN rapeseed extreme hardened oil.

[0011]

[Embodiments of the Invention] Hereafter, the fats-and-oils constituent for sprays of this invention is explained in full detail. You may use the compounded oil which could mention palm judgment oils, such as palm oil, a palm olein, and a super olein, palm hardened oil, and palm judgment hardened oil, and could carry out independent use of these, and mixed two or more sorts with the palm system fats and oils which are the ester-interchange raw material used by this invention. As for the iodine value of these palm system fats and oils, it is desirable that it is 48-67.

[0012] moreover, the rapeseed oil which contains erucic acid 20 to 60% as high ERUSHIN rapeseed extreme hardened oil which is another ester-interchange raw material -- up to five or less iodine value and 50 degrees C or more of melting points -- hydrogenation -- the bottom -- although -- it is used

[0013] The ester-interchange fats and oils which constitute the fats-and-oils constituent for sprays of this invention come [99 - 85% of the above-mentioned palm system fats and oils] to

carry out the ester exchange reaction of the 3 - 10% to 97 - 90% preferably the 1 - 15% of the above-mentioned high ERUSHIN rapeseed extreme hardened oil. Since the food after carrying out the spray of the spray fats and oils to food will become hard and ***** will also become bad if stickiness of the front face of the food at the time of using that the amount of the above-mentioned high ERUSHIN rapeseed extreme hardened oil used is less than 1% for food as fats and oils for sprays cannot be prevented but it exceeds 15%, it is not desirable.

[0014] Moreover, as for the ester-interchange fats and oils which carried out the ester interchange of the above-mentioned palm system fats and oils and the above-mentioned high ERUSHIN rapeseed extreme hardened oil, it is good that the fatty acid composition considers [35 - 60% of unsaturated fatty acid contents] as 1 - 5% of range preferably 0.5 - 8% of 40 - 50% and 20 or more carbon numbers saturated fatty acid contents. If there are few unsaturated fatty acid contents of the above-mentioned ester-interchange fats and oils than 35%, since the food after carrying out the spray of the spray fats and oils to food will become hard and **** being injured of food will become bad, it is not desirable, and since stickiness of the front face of the food at the time of using for food as fats and oils for sprays cannot be prevented if [than 60%] more, it is not desirable. Moreover, since stickiness of the front face of the food at the time of using for food as fats and oils for sprays cannot be prevented if there are few 20 or more-carbon number saturated fatty acid contents than 0.5%, when [than 8%] more [it is not desirable and], it is in the inclination for the melting point of fats and oils to become high, and for **** being injured of the melting point to become bad.

[0015] Although which method of the method using metal catalysts, such as a method or a sodium methylate which uses lipase as a catalyst, may be used as the method of the ester interchange in this invention, the way of the method using lipase serves as a savory spray fats-and-oils constituent.

[0016] As long as the lipase used by the above-mentioned ester interchange has ester-interchange activity to fats and oils, what has position singularity may not have position singularity. For example, the lipase obtained from Alcaligenes, Rhizopus, an Aspergillus, a Mucor, a Penicillium, a can reader group, etc. is mentioned. Although these lipase can also be used alone, it is good to make support, such as the diatom earth, an alumina, activated carbon, and a ceramic, usually fixed, and to use. The ester exchange reaction using lipase is performed with the reaction temperature of 65-85 degrees C under a non-solvent. Either the successive reaction of a column formula or a batch-type reaction may be used for a reaction.

[0017] What is necessary is just to perform the ester exchange reaction using metal catalysts, such as a sodium methylate, by the usual method.

[0018] Thus, although the obtained ester-interchange fats and oils may be used as a fats-and-oils constituent for sprays of this invention as it is, in order to adjust the hardness of fats and oils to these ester-interchange fats and oils, the melting point may mix fats and oils 25 degrees C or more. When this melting point mixes fats and oils 25 degrees C or more, the content of the above-mentioned ester-interchange fats and oils is 30 - 50% still more preferably 20 to 70% preferably 10% or more, and the content of fats and oils of 25 degrees C or more of melting points is preferably mixed 80 to 30% 90% or less so that it may become 70 - 50% still more preferably. At this time, the prevention effect of stickiness of the front face of the food at the time of using that the above-mentioned ester-interchange fats and oils are less than 10% for food as fats and oils for sprays is fully difficult to get.

[0019] The ester-interchange fats and oils which carried out the ester interchange of the ester-interchange fats and oils which carried out the ester interchange of the hardened oil of palm

judgment hardened oil, such as cone hardened oil, rice bran hardened oil, cottonseed hardened oil, rapeseed hardened oil, soybean hardened oil, palm hardened oil, and palm olein hardened oil, palm oil and palm judgment oils and these one sort, or the two sorts or more, these one sort or two sorts or more, and the liquefied oil as fats and oils of the 25 degrees C or more of the above-mentioned melting points are mentioned. Furthermore, these fats and oils can be used as independent or a compounded oil which mixed two or more sorts. When considering as a compounded oil, the melting points, such as a liquefied oil and a super olein, can use it by mixing even fats and oils 25 degrees C or less so that the melting point of a compounded oil may become 25 degrees C or more.

[0020] When the above-mentioned melting point uses hardened oil as fats and oils 25 degrees C or more, it is good that the content of the above-mentioned hardened oil considers as 40% or less preferably 60% or less from a viewpoint which offers the fats and oils for sprays which prevent stickiness of the front face of the food at the time of using for food as fats and oils for sprays, and can also employ the flavor of a material efficiently. This is because the flavor of the food which carried out the spray of the spray fats and oils by a hardening smell becoming strong is spoiled, when hardened oil exceeds 60%. Although palm judgment hardened oil, such as above-mentioned cone hardened oil, rice bran hardened oil, cottonseed hardened oil, rapeseed hardened oil, soybean hardened oil, palm hardened oil, and palm olein hardened oil, can be used as this hardened oil, cone hardened oil, rice bran hardened oil, cottonseed hardened oil, and rapeseed hardened oil are more desirable on flavor.

[0021] Moreover, when palm oil and a palm judgment oil are used as fats and oils of the 25 degrees C or more of the above-mentioned melting points, what employed efficiently the flavor of the material of the food which carried out the spray of the spray fats and oils with the flavor carried out frankly is obtained. If the melting point fraction in a palm is used especially, the food with which the flavor of a material was employed efficiently more notably can be obtained. Although obtaining the melting point fraction in a palm from palm oil has solvent separation and dry judgment, it is more desirable than ** so that it may be what carried out solvent separation. An acetone and n-hexane are mentioned as a solvent used here.

[0022] Moreover, if the ester-interchange fats and oils which carried out the ester interchange of one sort or two sorts or more of fats and oils of palm oil, a palm judgment oil, palm judgment hardened oil, and palm hardened oil are used when using an ester-interchange oil as fats and oils of the 25 degrees C or more of the above-mentioned melting points, especially flavor is good and stickiness of the front face of the food at the time of using for food as fats and oils for sprays can be prevented. The way is good although there are a method of making lipase a catalyst as the method of this ester interchange and a method using a metal catalyst, and lipase was used.

[0023] The fats-and-oils constituent for sprays of this invention is suitably used as a spray oil at the time of manufacturing food, such as confectionary, such as snack confectionary which used a potato, a cone, rice, wheat flour, etc. as the raw material, PURETTSUERU, a hard biscuit, and a cracker, a pan class, and cakes.

EXAMPLE

[Example] Next, this invention is not limited by these examples although an example explains this invention in detail.

[0025] The ester exchange reaction was performed for 10kg of 95% of palm oil of the [example 1] iodine value 52.1, and hardened oil [an iodine value 1.5 and 5% of high ERUSHIN rapeseed

extreme hardened oil of 60.5 degrees C of melting points] compounded oils by the 15l. reaction vessel, using lipase QLC(Meito Sangyo Co., Ltd. make)50g as the reaction temperature of 70 degrees C, and a catalyst. Bleaching (for the bottom of reduced pressure of 3% of clay, 85 degrees C, and 10mmHg and 30 minutes) and deodorization (for the bottom of 250 degrees C, 3% of steam entrainment *****, and 1mmHg reduced pressure and 60 minutes) were performed after the reaction end (reaction-time 48hr), and the fats-and-oils constituent for sprays (ester-interchange fats and oils) was obtained. The fatty acid composition of the obtained fats-and-oils constituent for sprays was shown in following [table 1].

[0026] An ester exchange reaction, bleaching, and deodorization were performed by the same method as an example 1 using the fats and oils shown in [examples 2-5] following [table 1], and the fats-and-oils constituent for sprays (ester-interchange fats and oils) was manufactured. At this time, the palm olein used the thing of an iodine value 56.8, and the super olein used the thing of an iodine value 65.2, respectively. Moreover, the fatty acid composition of the obtained spray fats-and-oils constituent was shown in [Table 1].

[0027] High ERUSHIN rapeseed extreme hardened-oil 5% ** of an iodine value 1.5 and 60.5 degrees C of melting points was blended with 95% of palm oil of the [example 6] iodine value 52.1, and the ester exchange reaction was performed for 30 minutes (under reduced pressure of 10mmHg) at 80 degrees C by making 0.1% of sodium methylate into a catalyst to fats and oils. After the reaction end, it rinsed, and the catalyst was removed and it dehydrated. Bleaching (for the bottom of reduced pressure of 3% (opposite oil) of clay, 85 degrees C, and 10mmHg and 30 minutes) and deodorization (for the bottom of 250 degrees C, 3% of steam entrainment *****, and 1mmHg reduced pressure and 60 minutes) were performed for this, and the fats-and-oils constituent for sprays was obtained. The fatty acid composition of the obtained fats-and-oils constituent for sprays was shown in [Table 1].

[0028] The fats-and-oils constituent for sprays was obtained using the palm oil and high ERUSHIN rapeseed extreme hardened oil which were used in the [examples 1-5 of comparison] examples 1-6, or cone hardened oil (35 degrees C of melting points) by the combination shown in following [table 1] as a mixed oil as an independent oil. The fatty acid composition of this fats-and-oils constituent for sprays was shown in [Table 1].

[0029] the ester-interchange fats and oils obtained in the [examples 7-13] example 1, and the following -- fats and oils as shown in [Table 2] were mixed, and the fats-and-oils constituent for sprays was obtained. The fats and oils currently used by following [table 2] are the ester-interchange oil (44 degrees C of melting points) which carried out the ester interchange of the melting point fraction in a palm (36 degrees C of melting points) which classified palm oil (34 degrees C of melting points), cone hardened oil (35 degrees C of melting points), and palm oil with the acetone, and the palm oil by Lipase QLC. it obtains -- having -- the fatty acid composition of the fats-and-oils constituent for sprays was shown in [Table 2]

[0030] The manufacture test was performed in the following combination and the process using the fats-and-oils constituent for sprays of the [cracker manufacture test] examples 1-13 and the examples 1-5 of comparison.

[0031]

During the <process> (1) above, seed combination is mixed for low-speed 2 minutes, and is kneaded by the vertical-mold mixer, and raising temperature is made into 23 degrees C.
(2) While being obtained above (1), ferment the seed ground at 27 degrees C for 18 hours.
(3) the kind ground while fermenting -- ***** combination -- adding -- a vertical-mold mixer -- a low speed -- mix for medium-speed 2 minutes for 2 minutes
(4) Ferment the ground obtained above (3) at 27 degrees C for 4 hours.
(5) Perform the ground obtained above (4) two 3 chip boxes, and roll out ***** to 2mm.
(6) Carry out mold omission and calcinate at 260 degrees C for 4 minutes.
(7) Carry out the spray of the spray oil immediately after baking.
[0033] Ten panelists estimated the flavor and ***** of a cracker which were <appraisal method of a cracker> Obtained. About stickiness of the front face of a cracker, after sprinkling salt and grated cheese over the calcinated cracker, the spray of the spray oil was carried out, and it was kept at 30 degrees C, and the stickiness of after (24 hours and 48 hours) was observed.
[0034] These evaluation results were shown in [Table 1] and [Table 2] with the following signs.

[0035]
[Table 1]

[0037] As shown in Tables 1-2, examples 1-13 are excellent also in any of the flavor in evaluation of a cracker, ******, and stickiness as compared with the examples 1-5 of comparison.

[0038]

[Translation done.]